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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,775	03/23/2004	Glenn W. Gengel	003424.P061	.4285

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EXAMINER

MULLEN, THOMAS J

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/807,775

Applicant(s)

GENGEL ET AL.

Examiner

Thomas J. Mullen, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-68 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4, 7-26 and 50-68 is/are allowed.
- 6) ☒ Claim(s) 5, 6, 27, 28, 32-34, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 29-31, 35 and 38-49 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/7/06 (4 pp.)
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

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1. The indicated allowability of claims 5-6, 27-28, 32-34 and 36-37 is withdrawn in view of the teachings of Liu et al (US 6867983), of record. The delay in setting forth the rejection(s) is regretted. Rejections based on the newly applied reference(s) follow.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 5-6, 27-28, 32-34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al (US 6867983--cited by applicant on 11/7/05).

As to claim 5, Liu et al discloses an RFID tag (Figs. 7-13 and 15-20), note:

flexible substrate 424 (see e.g. col. 12, lines 3-5);

an integrated circuit 402 embedded within the flexible substrate 424, the top surface of the integrated circuit being coplanar with the flexible substrate (see Fig. 12, where IC 402 is shown coplanar with a "strap" substrate 426 by being positioned in a "microstructure recess" 460; at col. 12, lines 47-52, Liu et al further teaches eliminating strap 420/substrate 426 such that "element 402 (may be) placed in a suitable microstructure recess...in a suitable device substrate 424", in coplanar relationship therewith);

at least one conductive element (410) formed on the flexible substrate, the at least one conductive element being electrically connected (via leads 416) to the integrated circuit (402), the conductive element serving as an antenna for the RFID tag (Fig. 7 shows antenna 410 on flexible substrate 424, see col. 5, lines 21-25); and

wherein the conductive element (410) comprises at least one of metal particles, organic particles, and semiconducting particles (see col. 13, lines 18-25, wherein the antenna 410 can be formed by "printing of a conductive ink, such as an ink containing silver particles").

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As to claim 6, conductive element 410 is a "printed" conductive element, as just discussed.

As to claim 27, Liu et al discloses a method of forming an RFID tag, comprising:  
depositing an integrated circuit (402) within a receptor in a flexible substrate (424) using Fluidic Self Assembly (see col. 6, lines 9-14 and col. 12, lines 3-5, and the discussion above regarding the direct coupling of the integrated circuit 402 to the substrate 424); and

forming at least one conductive trace on the flexible substrate to simultaneously form an electrical connection (416) to the integrated circuit and form an antenna element (410) (see Figs. 7-8 and 19-20; col. 12, lines 50-52; and col. 13, lines 11-13 and 20-22).

As to claim 28, note the discussion of claim 5 above.

As to claim 32, as shown e.g. in Figs. 8 and 13 it appears that the integrated circuit 402 has (at least) four "interconnection pads" 440 (see col. 5, lines 49-54).

As to claim 33, note the discussion of claim 5 above.

As to claim 34, note the discussion of claim 6 above.

As to claim 36, as shown in either Fig. 8 or Fig. 20 of Liu et al there are "conductive traces" (antenna end portions 412) formed on the substrate 424 (note again the discussion at col. 12, lines 47-52), on opposite sides of integrated circuit 402; as shown, there are pairs of electrical connection elements (416)--out of the total of four shown--which electrically connect the conductive traces (412) to the integrated circuit (402) in "transversely opposed corners" or in "diagonally opposed corners" of the integrated circuit (402).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al.

As to claim 37, Liu et al fails to specify that the "microstructure element" (i.e., integrated circuit) 402 is a "NanoBlock" integrated circuit. However, the examiner takes Official Notice

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that, at the time of the invention, it was known in the art of forming RFID tags using FSA to utilize integrated circuits of the "NanoBlock" type. It would have been obvious to use "NanoBlock" integrated circuits in forming the RFID tags in Liu et al, since any reduction in size of the integrated circuit required for an RFID tag will enable the tag itself to be reduced in size, thereby enhancing the utility of the tag.

6. Claims 29, 35 and 38-49 are objected to under 37 CFR 1.75(a) for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 29, lines 2-3, "the electrical connection connected to the integrated circuit through..." is vaguely worded; perhaps "connected" should be deleted (it appears to be redundant), and before "through" should be inserted --is done-- (note the corresponding wording in claims 30-31).

Claim 35, line 1, before "flexible substrate" should be inserted --the-- or --said--.

7. Claims 29-31, 35 and 38-49 would be allowable if rewritten to overcome the objection(s) under 37 CFR 1.75(a) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 2-4, 7-26 and 50-68 are allowed.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The IDS filed 8/7/06 was not considered (at that time) because the submission lacked both the fee set forth in 37 CFR 1.17(p) and the "statement" specified in 37 CFR 1.97(e); the letter mailed by the Office on 8/10/06 erroneously stated that the IDS was filed after the issue fee was paid. Since prosecution has been reopened in this application, the IDS has now been considered.

9. This Office action is non-final.

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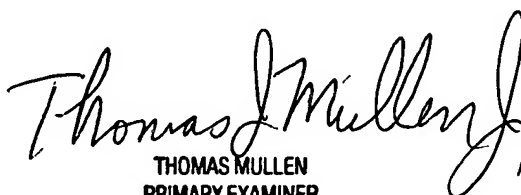
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Mullen, Jr. whose telephone number is 571-272-2965. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu, can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJM

  
THOMAS MULLEN  
PRIMARY EXAMINER  
AU 2612